

Yian Su, Ph.D. Candidate

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Education






- Sep 2021 – present 📖 **Ph.D., Northwestern University**, Computer Science.
Advisor: *Simone Campanoni*
Research Interest: *Parallelizing & Optimizing Compilers, Runtime Techniques, Heterogeneous Systems.*
- Sep 2018 – Jun 2020 📖 **Master's, Northwestern University**, Computer Science.
GPA: 4.0/4.0
Thesis Committee: *Simone Campanoni* (Advisor), *Peter Dinda*
Thesis: *A Better Memory Understanding for Program Dependence Graph through Static-Value Flow Analysis.*
- Sep 2017 – May 2018 📖 **University of Illinois at Chicago**, Electrical and Computer Engineering.
Senior-year Exchange Program.
GPA: 4.0/4.0
Advisor: *Vladimir Goncharoff*
Project: *Intelligent Shopping Cart.*
- Sep 2014 – Jun 2018 📖 **Bachelor's, Northeastern University**, Computer Science.
GPA: 4.34/5.0
Ranking: 1/195

Publications




Conference Proceedings

- 1 J. Giordani, Z. Xu, E. Colby, *et al.*, “Revisiting Computation for Research: Practices and Trends,” in *2024 SC24: International Conference for High Performance Computing, Networking, Storage and Analysis SC*, Los Alamitos, CA, USA: IEEE Computer Society, 2024, pp. 1097–1110. 🌐 DOI: 10.1109/SC41406.2024.00076.
- 2 **Y. Su**, M. Rainey, N. Wanninger, *et al.*, “Compiling loop-based nested parallelism for irregular workloads,” in *Proceedings of the 29th ACM International Conference on Architectural Support for Programming Languages and Operating Systems, Volume 2*, ser. ASPLOS '24, La Jolla, CA, USA: Association for Computing Machinery, 2024, pp. 232–250, ISBN: 9798400703850. 🌐 DOI: 10.1145/3620665.3640405.
- 3 Z. Xu, Y. Chon, **Y. Su**, *et al.*, “Prompt: A fast and extensible memory profiling framework,” in *Object-oriented Programming, Systems, Languages, and Applications*, ser. OOPSLA '24, 2024.
- 4 A. Matni, E. A. Deiana, **Y. Su**, *et al.*, “Noelle offers empowering llvm extensions,” in *Proceedings of the 20th IEEE/ACM International Symposium on Code Generation and Optimization*, ser. CGO '22, Virtual Event, Republic of Korea: IEEE Press, 2022, pp. 179–192, ISBN: 9781665405843. 🌐 DOI: 10.1109/CGO53902.2022.9741276.
- 5 C. Wang, **Y. Su**, L. Zhou, S. Peng, Y. Yuan, and H. Huang, “A virtual network embedding algorithm based on hybrid particle swarm optimization,” in *Smart Computing and Communication*, Cham: Springer International Publishing, 2017, pp. 568–576, ISBN: 978-3-319-52015-5.


Talks

- May 2025  **The Parallel-Semantics Program Dependence Graph and Its Use in Parallel Optimization.**
Research Talk, Northwestern University.
- May 2024  **Compiling Loop-Based Nested Parallelism for Irregular Workloads.**
Paper Presentation, ASPLOS'24.
- Dec 2023  **Effectively Scheduling Nested Fork-join Parallelism with Irregular Workloads.**
Liberty Research Group, Princeton University.
-  **Effectively Scheduling Parallel Programs over Parallel Architectures.**
Ph.D. Qualifying Exam, Northwestern University.
- Jul 2023  **Democratizing Heartbeat Scheduling via Heartbeat Compiler.**
The Constellation Project Workshop, Northwestern University.





Work Experience

- Sep 2024 – Mar 2025  **HPC Compiler Intern**, NVIDIA Corporation.
Implemented an HPC compiler that reduces engineer effort for writing accelerator-specific, less portable parallel program using JIT compilation techniques and MLIR framework.
- Jun 2020 – Sep 2021  **Software Development Engineer**, Amazon.com.
Collaborated with front-end and research teams, implemented and launched a product recommendation widget worldwide on the Amazon website.
- Jun 2019 – Sep 2019  **Software Development Engineer Intern**, Amazon.com.
Designed and implemented an automated data pipeline to generate a new feature in Amazon's search process to decrease the search defects rate.

Teaching Experience





- Sep 2019 – Dec 2019  **Teaching Assistant**, Northwestern University.
Introduction to Database Systems and Data Warehouse.

Skills

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|-----------------------|---|
| Programming Languages |  C, C++, Python, Java, Markdown, \LaTeX . |
| Softwares |  LLVM, MLIR, Git, VS Code, Jupyter Notebook. |
| Sports |  Soccer. |
| Instruments |  Violin. |





Miscellaneous

Awards

- Apr 2024  **Travel Grant**, ASPLOS'24.
- May 2018  **Winner**, Computer Engineering Category at UIC EXPO 2018.
- Nov 2017  **National Scholarship**, Northeastern University.
- Nov 2016  **National Scholarship**, Northeastern University.

Miscellaneous (continued)

Activities

- Sep 2024  **Associate Concertmaster.** Tualatin Valley Symphony.
- Jan 2024  **Associate Concertmaster.** Northwestern Philharmonia.
- Sep 2018  **Vice President of Membership.** Northwestern Toastmasters Club.
- Apr 2016  **Vice President.** Northeastern International Communication Club.